US EPA NATIONAL VOLATILE ORGANIC COMPOUND EMISSION STANDARDS FOR ARCHITECTURAL COATINGS

Introduction

The National Volatile Organic Compound Emission Standards (NVOCES) for Architectural Coatings regulates the content of volatile organic compounds (VOCs) in architectural coatings sold or distributed in the United States. Architectural coatings are defined as coatings that are recommended for field application to stationary structures and their appurtenances, to portable buildings, to pavements, or to curbs. VOC emissions have the potential to cause or contribute to ground-level ozone, elevating it to levels that violate the national ambient air quality standards (NAAQS). Ground-level ozone is a major component of "smog" and is associated with a wide variety of human health effects, agricultural crop loss, and damage to forests and ecosystems. The EPA determined that architectural coatings account for about nine percent of VOC emissions from all consumer and commercial products. In many states, architectural coatings represent one of the largest identifiable sources of unregulated VOC emissions. The NVOCES standards regulate VOC content in architectural coatings in order to reduce overall VOC emissions and comply with NAAQS.

The standards arose from and are part of the Clean Air Act, section 183 (e). In September 1998, the EPA issued a final ruling on VOC standards for architectural coatings (CFR, September 11, 1998, Volume 63, Number 176), outlined below. Among other requirements, the ruling mandates labeling specifications for architectural coatings produced after September 13, 1999.

Program Summary

For the purposes of this regulatory program, architectural coatings are divided into over 50 sub-categories. Each sub-category has its own VOC content limit. The VOC content of an architectural coating must be within this EPA set limit. Domestic manufacturers and importers of foreign products for distribution in the US whose products do not meet the set standard may comply with the ruling by paying an exceedance fee. A tonnage exemption allows manufacturers who sell or distribute quantities of architectural coatings that do not comply with VOC content limits to comply if they produce less than a specified amount per year.

The labeling program is a combination of neutral labeling and negative labeling. It is neutral because it mandates the reporting of product ingredients. It can also be considered negative labeling because warning statements regarding ingredient impacts on home, health, and environment are required for some coating categories.

The labeling component of the regulation specifies that all architectural coatings produced after September 13, 1999, must indicate of the following information on the product label or lid of the container:

A) The date of manufacture or a code indicating this date (this can also be displayed on the bottom of the container);

B) A statement of the manufacturer's recommendation regarding thinning of the coating (this does not apply to thinning with water);

C) Either the VOC content of the coating, displayed in units of grams of VOC per liter of coating; or the VOC content limit (as specified by the standards) with which the coating is required to comply and does comply, displayed in units of grams of VOC per liter of coating. (Any coating that does not comply with VOC content limits, such ones for which the exceedance fee or tonnage exemption provision is being used, must be labeled with its VOC content.)

Architectural coatings used for industrial maintenance must also be labeled with one of the following phrases indicating that the coating is not intended for general consumer use:

A) "For industrial use only."

B) "For professional use only."

C) "Not for residential use," or, "Not intended for residential use."

D) "This coating is intended for use under the following conditions:" (Each of the following conditions that applies to the coating must be included).

1) Immersion in water, wastewater, or chemical solutions (aqueous and nonaqueous solutions), or chronic exposure of interior surfaces to moisture condensation;

2) Acute or chronic exposure to corrosive, caustic, or acidic agents, or to chemicals, chemical fumes, or chemical mixtures or solutions;

3) Repeated exposure to temperatures above 120 deg. C (250 deg.F);

4) Repeated (frequent) heavy abrasion, including mechanical wear and repeated (frequent) scrubbing with industrial solvents, cleaners or scouring agents; or

5) Exterior exposure of metal structures and structural components.

For recycled coating, manufacturers and importers must include the following statement indicating the post-consumer coating content on the label or lid of the container: "CONTAINS NOT LESS THAN *X* PERCENT BY VOLUME POST-CONSUMER COATING," where "*X*" is replaced by the percent by volume of post-consumer architectural coating.

In addition to labeling, compliance is enforced through mandatory recordkeeping and reporting of VOC content information. All manufacturers and importers of architectural coatings must report the VOC content of their products. Manufacturers who produce recycled architectural coatings, or who use the exceedance fee or the tonnage exemption provision to comply with the regulations, must keep records on the VOC content of their products.

Program Methodology

Mandatory labeling changes are used to target a problem (ground-level ozone), by focusing on one of the major pollutants (VOCs) that contributes to the problem. The VOC content limits were determined using information gathered during an initial EPA process of regulated negotiation (which began in 1992 and concluded without consensus), along with other information. Specifically, the EPA took into consideration data from a 1990 industry study on the volume, VOC content, and hazardous air pollutant (HAP) content of architectural coatings.

The EPA expects that the VOC content of architectural coatings limits will encourage the reformulation of products with lower VOC content. Additionally, labeling requirements that mandate indicating VOC content on the product label will provide consumers with a method of readily identifying products with lower VOC content.

References

US Federal Register: September 11, 1998 (Volume 63, Number 176).

Product Categories

Architectural Coatings